Summary of Modeling Guidance for SO_2 Designations

Background

EPA is issuing modeling guidance for the 1-hour SO_2 NAAQS in support of modeling for SO_2 designations. Refined dispersion modeling will be used for the following purposes in the designations process:

1. to inform nonattainment boundaries for areas with violating ambient air quality monitors if the presumptive county boundaries are not used.
2. to demonstrate no violations or contributions to violations of the standard in areas without a violating monitor as evidence of attainment and inform attainment boundary.

Much of the guidance is based on EPA's *Guideline on Air Quality Models*, also published as Appendix W of 40 CFR Part 51. Appendix W is the primary source of information on the regulatory application of air quality models for State Implementation Plan (SIP) revisions for existing sources and to new source reviews (NSR) including prevention of significant deterioration (PSD). When questions arise about modeling techniques and procedures, state and local agencies should refer to the appropriate Regional Modeling Contact.

Guidance summary

- States will use the EPA's preferred model for near-field dispersion, AERMOD, unless use of an alternative model is justified (Section 3.2 of Appendix W)
- Initial focus should be on emitters of 100 tons/year or more within 50 km of a violating monitor with use of screening modeling to screen out emitters and decrease modeling domain size and number of facilities explicitly modeled.
- Sources should be modeled using short-term allowable emissions. These emission rates should be available from permit information or inventories used for PSD/NSR modeling.
- Stacks with heights below Good Engineering Practices (GEP) should be modeled with actual stack heights. Stacks with heights above GEP should be modeled at GEP. Building downwash should be considered for stacks below GEP.
- Sources should be modeled using representative meteorological data, either 5 years of representative National Weather Service (NWS) data or at least 1 year of site-specific, or onsite, meteorological data.
- Appropriate background concentrations should be included in the design value calculations and follow current modeling guidance for PSD/NSR permit modeling.
- Documentation of the modeling analyses, including modeling protocol and technical support document should be included with designations decision